

REMARKS

I. Claim Status

Claims 1-22 are currently pending. Claims 15-22 are cancelled to non-elected subject matter. Claims 1-14 have been amended. New claim 23 has been added. Claim 10 has been cancelled without prejudice or disclaimer. Claims 1-4 have been amended to include the subject matter of claim 10. Claims 1-4 have been further amended to include additional subject matter contained within the specification at pages 43 line 11 to pages 45 line 6 and Examples 2, 3 and 5. Claims 7, 8, 9, and 11 have been amended to proper dependant claim language. Claims 12-14 have been amended to proper dependant claim language and to include additional subject matter contained within the specification at page 35 line 17 to page 37 line 7. New claim 23 finds support at claim 6 and the specification as filed at page 12 lines 7-11.

II. Claim Rejections

a) 35 U.S.C. §112 Second Paragraph

Claims 1-14 stand rejected as being indefinite. The Examiner contends that the phrasing “detecting/discriminating” is unclear. The Examiner asserts it is unclear if the applicant is detecting the complex that is formed or discriminating the formed complex. Claims 1-14 have been amended to add the phrase “and/or”. Reconsideration and withdrawal of this rejection is respectfully requested.

Claim 6 stands rejected as being indefinite. The Examiner asserts that there is no antecedent basis in claim 1 for “the label modification”. Claim 6 has been amended to delete “the label modification”. Reconsideration and withdrawal of this rejection is respectfully requested.

Claim 10 stands rejected as being indefinite. Claim 10 has been cancelled without prejudice or disclaimer.

b) 35 U.S.C. §102

Claims 1, 3, 5, 6, and 8-10 stand rejected as being anticipated by Cass (U.S. Patent 6,312,906). The Examiner contends that with regard to claim 1, Cass allegedly teaches a method of detecting a biochemical sample by use of a hairpin structure attached to a solid phase, and that Cass allegedly exemplifies this method in Example 1. The Examiner also contends that Cass teaches the attachment of an oligonucleotide probe with an internal hairpin (or loop) with a biotin derivative and attaching the probe to a platinum surface (electrode). The Examiner contends that Cass further teaches the use of a solution of target nucleic acids containing a sequence complementary to a sequence in the hairpin loop of the probe, which results in the movement of the fluorescent moiety away from the surface and with an increase. The Examiner concludes that Cass thus teaches a method of detecting a biochemical reactant by hybridizing the specimen to a nucleic acid probe with a loop structure on a biochip with an electrode, and detecting the duplex nucleic acid complex formed. Applicants respectfully traverse.

Original claim 10, in part, was not rejected as anticipated by Cass. Without conceding the correctness of the Examiner's position, claim 1 has been amended to include the limitation found in claim 10 (*i.e.*, label selected from the group consisting of fine metal particles, fine Si particles, magnetic particles, ceramic fine particles and semiconductors) not anticipated by Cass. Applicants respectfully request reconsideration and withdrawal of this objection.

Claim 3 stands rejected as anticipated in view of Cass. Without conceding the correctness of the Examiner's position, claim 3 has been similarly amended as claim 1 to recite the limitation not anticipated by Cass in claim 10. Applicants respectfully request reconsideration and withdrawal of this rejection.

Claims 5, 6, 8 and 9 stand rejected as anticipated in view of Cass. Since claims 5, 6, 8 and 9 depend from claims 1-4, and because claims 1 and 3 are now no longer anticipated by Cass, reconsideration and withdrawal of this rejection is respectfully requested.

Claims 1-4, 5, 6 and 8-10 stand rejected as anticipated by Gold (WO/1999/31275). Without conceding the correctness of the Examiner's position, claims 1-4 have been amended to recite the limitation contained in claim 10 not anticipated by Gold. Claims 5, 6 and 8-10 depend from amended claims 1-4, they are also not anticipated. Reconsideration and withdrawal of this rejection is respectfully requested.

c) 35 U.S.C. §103(a)

Claims 3, 7, 11, 12, 13 and 14 stand rejected as obvious over Cass (U.S. Patent 6,312,906) in view of Blackburn (U.S. Patent 6,264,825). The Examiner contends that Cass allegedly teaches a method of detecting a biochemical sample by use of a hairpin structure attached to a solid phase. Cass allegedly also teaches the attachment of an oligonucleotide probe with an internal hairpin with a biotin derivative, and attaching the probe to a platinum surface. The Examiner also contends that Cass allegedly teaches a solution of target nucleic acids containing a sequence complementary to a sequence in the hairpin loop of the probe, which results in the movement of the fluorescent moiety away from the surface and an increase in intensity. Additionally, it is alleged that Cass teaches a method of detecting a biochemical reactant by hybridizing the specimen to a nucleic acid probe with a loop structure on a biochip with an electrode, and detecting the duplex nucleic acid complex formed. The Examiner does admit that Cass does not teach the labeling of a biochemical sample in advance of hybridization, and that Cass does not disclose detection of the probes on each electrode prior to the hybridization with the biochemical reactant, nor does it teach detection/discrimination of the complex by electronic, optical or magnetic methods. The Examiner contends that it would have been obvious to combine the hairpin probes of Cass with the detection method of Blackburn.

Claims 4, 7, 11, 12, 13 and 14 stand rejected as obvious over Gold in view of Blackburn. The Examiner contends that it would have been obvious to combine the hairpin probes of Gold with the detection method of Blackburn. Applicants respectfully traverse. Neither Cass, Gold or Blackburn teach, suggest or provide a motivation to use the labels recited in amended claims 1-4. Claims 1-4 and their dependant claims are therefore not obvious.

CONCLUSION

In view of the above, each of the presently pending claims in this application is believed to be in immediate condition for allowance. Accordingly, the Examiner is respectfully requested to pass this application to issue.

The Examiner is respectfully requested to contact the undersigned at the telephone number indicated below if the Examiner believes any issue can be resolved through either a Supplemental Response or an Examiner's Amendment.

The Commissioner is authorized to charge, if necessary, any deficiency or credit any fee to Deposit Account No. 04-0100.

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Respectfully submitted,

By 

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